Indiana Traffic Safety Facts 2001

Occupant Protection

http://www.in.gov/cji

With the exception of New Hampshire, every state has mandatory seatbelt laws. However, only 15 states and the District of Columbia extend this requirement to passengers in the rear seats. While Indiana is not one of these states, it is one of the 18 states and the District of Columbia that have primary enforcement, which allows law enforcement officials to stop vehicles based upon seatbelt use alone. In Indiana, all front seat occupants as well as all rear seat passengers under 12 years of age must be restrained, unless they are in an out-of-state vehicle. All children under the age of four must be properly restrained by a child safety seat. Violators of Indiana's primary seatbelt law may receive a fine not to exceed $25 for a seatbelt violation, and up to four points may be assessed on the driver's record for each violation in which child passenger restraints are not used.

Children are exempt from restraint laws while occupying one of the following vehicles: school bus; taxi cab; rental vehicle less than 30 days; ambulance; out of state vehicle unless operated in Indiana more than 60 days in any calendar year; public passenger bus; a motor vehicle with a seating capacity greater than nine that is owned or leased and operated by a religious or not-for-profit youth group; antique motor vehicle; motorcycle; motor vehicle owned or leased by a governmental unit used in official law enforcement duties; or any motor vehicle being used in an emergency. Occupants are exempt from restraint laws in the following situations: medical reasons; children covered by Restraint System Laws (IC 9-19-11, exemptions listed above); commercial or U. S. Postal Service delivery vehicles; newspaper route carriers or bundle haulers; driver examiners; vehicles not classified as passenger motor vehicles.[1] This last classification plays a crucial part in Indiana's fatality and injury rates, as it includes pickup trucks. As long as pickup truck occupants as young as four years of age can legally travel without the mandate of seatbelts, fatality rates and injury severity among this vehicle population will be greater than the overall rate, and will continue to pull down the State's overall seatbelt usage rates.

The average inpatient costs for injuries sustained by unrestrained occupants was 55 percent higher than restrained occupants.

Although failure to use proper safety restraints is considered by some to be a crime only against one's self, the evidence proves contrary. In 1999, the National Highway Traffic Safety Administration (NHTSA) estimated that the average cost for each fatality was $868,639, based upon medical and funeral costs, lost wages, litigation fees, property damage, and loss of future earnings potential. Not included are the emotional and financial costs of dealing with pain, suffering, and the quality of life. According to NHTSA, the average inpatient costs incurred from motor vehicle crash injuries are 55 percent higher for unrestrained occupants than restrained occupants. Taxpayers and insurance holders—not the individuals involved—bear the burden of

[1] Information provided here was obtained from the Indiana Code (IC 9-19-11-1 through 9-19-11-3 Passenger Restraint Systems for Children), available at http://www.in.gov/legislative/ic/code/.

these economic losses through increased healthcare expenses, increased insurance premiums, and increased personal taxes. Proper restraint use would reduce, if not eliminate, some of these injuries and costs.

Restraint System Use

Based on the statewide *September 2001 Indiana Roadside Observation Survey of Safety Belt Use*, 67.4 percent of drivers and front seat passengers were properly restrained in passenger vehicles (passenger cars, sport utility vehicles, and passenger vans) and pickup trucks. This represented a 5.3 percent increase from observations recorded in the September 2000 statewide survey (62.1 percent). During the observations in 2001, front seat occupants of passenger cars were properly restrained in 75.7 percent of the observations, compared to 41.9 percent for front seat occupants of pickup trucks who were properly restrained. A very low seatbelt usage rate, 37.7 percent, was found among front seat occupants of pickup trucks on rural collector roads.

Safety restraint use was 16.5% lower among male front seat occupants than their female counterparts in 2001.

The 2001 survey was consistent with prior years' findings that female front seat occupants use safety restraints more (77.8 percent) than their male counterparts (61.3 percent). In particular, female front seat passengers of minivans had the highest usage rate at 83.9 percent, compared to 70.4 percent for male front seat passengers of minivans. Occupants least likely to use seatbelts were male front seat passengers of pickup trucks, whose usage rate was 31.6 percent. The usage rate for female passengers of pickup trucks was somewhat higher at 53.4 percent.

The data in Table 1 provides information concerning restraint use by gender among passenger fatalities for 2001. Consistent with observational data, male passengers killed in motor vehicle crashes were more likely to be

Table 1. Restraint Use by Passenger Fatalities in Vehicles by Age for Indiana, 2001

Restraint Use	Age Group (Years)					
	0-4	5-9	10-15	16-20	21+	Total
	Male Passengers					
Restrained	5	2	3	6	18	34
Unrestrained	1	3	4	16	38	62
Unknown	1	0	0	4	4	9
Total Males	**7**	**5**	**7**	**26**	**60**	**105**
% Killed Males Unrestrained	**14.3%**	**60.0%**	**57.1%**	**61.5%**	**63.3%**	**59.0%**
	Female Passengers					
Restrained	5	1	1	4	35	46
Unrestrained	0	2	6	12	39	59
Unknown	0	0	1	4	1	6
Total Females	**5**	**3**	**8**	**20**	**75**	**111**
% Killed Females Unrestrained	**0.0%**	**66.7%**	**75.0%**	**60.0%**	**52.0%**	**53.2%**

unrestrained than female passengers (59.0 percent of males were unrestrained, compared to 53.2 percent of females). Although the total number of killed motor vehicle passengers among the 16–20-year-old groups was rather small at 26 males and 20 females, these two groups were almost identical with regard to the percent unbelted at 61.5 percent for males and 60.0 percent for females.

The 2001 Indiana crash report data indicate that correct safety restraint use was less likely to occur when alcohol involvement was reported by the investigating officer. When restraint usage was known, 101 out of 125 killed drivers (80.8 percent) in alcohol-involved crashes were not wearing seatbelts. Further, of a total 82 killed drivers age 21–44 years old in alcohol-involved crashes, 83.0 percent were unrestrained. For all drivers killed in crashes, the rates were 62.6 percent unrestrained for all age groups, and 70.3 percent for drivers age 21–44.

Restraint System Effectiveness

NHTSA cites research stating that lap/shoulder belts, when used on front seat occupants (age five and older), reduce the risk of fatal injury by 45 percent in passenger cars and 60 percent in light trucks. NHTSA also has found that the overall fatality-reducing effectiveness of airbags is 12 percent. Effectiveness of child safety seats was found to reduce fatal injury by 71 percent for infants in passenger cars, and 58 percent in light trucks. Comparatively, the effectiveness of child safety seats for toddlers was 54 percent in passenger cars and 59 percent in light trucks. Furthermore, NHTSA estimates that from 1975 to 2001, 147,246 lives were saved from the use of safety belts in the United States.[2]

Despite the research and crash data supporting the safety and life-saving benefits to wearing seatbelts, there persists many myths and misconceptions associated with crash risk and injury severity. Examples of such myths include some adults believing that he or she can safely protect a child riding on his or her lap during a crash, that it is safer to be "thrown" clear from the crash, and unfounded fears pertaining to entrapment while restrained by seatbelts.

NHTSA states that ejection from the vehicle is one of the most injurious events that can happen to an occupant in a crash. Nationwide, only one percent of occupants using restraints were totally ejected (thrown out of the vehicle), compared to 24 percent for unrestrained occupants.

Based upon the fatal crash data, safety restraint use plays an important role in preventing occupant ejection from the vehicle during a crash. In 2001, there were 47 passenger car drivers killed that were totally ejected from their vehicle at the time of the crash. Of those 47 drivers, 43, or 91.5

[2] Safety restraint information throughout the document, unless otherwise specified, was taken from the National Highway Traffic Safety Administration's "Traffic Safety Facts 2001, Occupant Protection." This document is available online at http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2001/2001occpro.pdf.

percent, were unrestrained. Another 10 out of 13 drivers (76.9 percent) were unrestrained and partially ejected. For light trucks, 39 of 40 fatally injured, unrestrained drivers (97.5 percent) were completely ejected, with another 18 of 20 (90.0 percent) partially ejected while unrestrained.

Injury severity among Indiana's truck drivers was greatly reduced when lap/shoulder belts were used.

Injury severity is another indicator of the potential for crash survival and severity of injury. Of the 186 drivers of passenger cars who sustained no injury, possible injury, or minor injuries only, 149, or 80.1 percent, were restrained at the time of the fatal crash. Conversely, only 53.7 percent of drivers who were seriously injured or killed were restrained at the time of the crash (181 of 337). For light trucks, the number of restrained drivers who sustained no injury, possible injury, or minor injuries only was 108 out of 148 drivers, or 73 percent. For seriously injured or killed light truck drivers, their restraint use was only 29 percent (63 of 218).

Children

During 2001 in Indiana, 15 of 33 (45.5 percent) child passengers (<16) killed in motor vehicle crashes were unrestrained. Overall, there were 151 children under 16 years of age involved in a fatal crash for which restraint use was known. Of those 151 children, 92 were between the ages of 0–9, the age range that best safety practice recognizes as needing child safety seats. Only 29 of those 92 children age 0–9 years were riding in a child safety seat at the time of the fatal crash, representing only 31.5 percent. Another 31 children in this same group were completely unrestrained (33.7 percent).

In Indiana in 2001, there were 12 passenger vehicle occupant fatalities under the age of five (see Table 2). Of those, 11 fatalities had a known restraint status recorded. One of the children killed was a two-year-old improperly restrained by only an adult lap and shoulder belt. The 12th child passenger under the age of five also was fatally injured while riding in an improperly used child safety seat in the cab of a tractor-truck.

Table 2. Children Under Five Years Old Fatally Injured in Passenger Vehicle Crashes by Age Group and Type of Restraint Used for Indiana, 2001

Restraint System-Use	Under One Year of Age	1-4 Years of Age	Total
Lap Belt	0	1	1
Lap and Shoulder Belt	0	2	2
Child Safety Seat	3	4	7
Child Safety Seat Used Improperly	0	1	1
Unknown	0	1	1
Total	3	9	12

81.6% of child restraints inspected were improperly used.

NHTSA reports that between 1975 and 2001, 5,085 lives were saved by the use of child restraints.[3] However, based on a recent nationwide campaign to increase child passenger safety ("Safe Kids Buckle Up"), 81.6 percent of the child restraints inspected were found to be improperly used, with an average of 3.0 errors per restraint. Rear facing child safety seats, used for newborns and infants, had 86.3 percent overall incorrect use, while forward facing child safety seats were at 88.0 percent incorrect use.

The most common misuses of child safety seats were: failure of the vehicle safety belt to tightly lock the car seat in the vehicle, failure of the child seat harness straps to snugly restrain the child, improper positioning of the harness retainer clip for rear facing seats, and incorrect use of the top tether strap for forward facing seats. At 85.1 percent, another common problem was that the vehicle shoulder belt was not properly centered over the occupants' shoulder.[4]

Conclusion

There are several ways that Indiana can improve the safety of automobile occupants.

According to the Automotive Coalition for Traffic Safety (ACTS), restraint use for adults and children occurs most often under the following situations: laws are enforced that require the use of age- and size-appropriate restraints, regardless of the type of vehicle and seating position; penalties for violating restraint laws are equivalent to other traffic related penalties; and the public is educated about restraint laws and considers the laws to be regularly enforced.

Indiana can improve occupant safety through the use of safety restraints in several ways. First of all, child passengers beyond the age of three should be required to use belt-positioning booster seats until their size is considered appropriate for discontinuance of the seat, which is approximately 80 pounds and four feet, nine inches tall.

The exceptions for non-passenger vehicles should be revised in order to include all vehicles on the road that are plated as a truck. All occupants should be required to use safety restraints regardless of age or seating position, thereby making it illegal for passengers to ride in truck beds on public roads or transport more passengers than there are seatbelts in the vehicle.

Furthermore, the maximum $25 fine for failure to comply with Indiana's restraint laws is considerably less severe than other fines for violations that endanger traffic safety, and no points are applied to the Driver's License unless the driver is cited due to an unrestrained child passenger under the age of four. The $25 fine should be the minimum fee associated with a seatbelt violation, coupled with points added to the violator's driving record, irregardless of the

[3] This information was taken from the National Highway Traffic Safety Administration's "Traffic Safety Facts 2001, Children." This document is available online at http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2001/2001children.pdf.

[4] This information was compiled using car seat check up data from Feb. 2001–May 2002. The results are available online at http://www.safekids.org/content_documents/Highlights.PDF. Car safety tips are available at http://www.safekids.org/tier3_cd.cfm?content_item_id=7210&folder_%20id=300.

driver's or passenger's age.[5] Indiana must not only continue to enforce zero tolerance laws when it comes to safety restraint, it must also continue to increase public awareness of the enforcement and reasons why enforcement is necessary.

Finally, there should be no exception for occupants of vehicles from other states, especially children. Safety should be required regardless of residency status, especially when Indiana's residents will be responsible for dealing with the consequences and economic impact associated with the crash.

This publication was prepared on behalf of the Indiana Criminal Justice Institute by Purdue University's Center for the Advancement of Transportation Safety. All information contained within was gathered from the Fatality Analysis Reporting System (FARS) Web-Based Encyclopedia provided by the National Highway Traffic Safety Administration (NHTSA) available online at http://www-fars.nhtsa.dot.gov. All figures are considered current as of December 2002. Please direct any questions concerning data in this document to the Center for the Advancement of Transportation Safety, Purdue University, Potter Engineering Center, Room 322, 500 Central Drive, West Lafayette, IN, 47907-2022.

[5] The National Safe Kids Campaign suggests "mandatory penalties for improper restraint such as points, suspension of a license and a fine of at least $76." More suggested provisions are available at http://www.cnn.com/2001/US/02/08/safety.seats/index.html#3.